1912.

WESTERN AUSTRALIA.

EDUCATION DEPARTMENT.

REPORT

UPON

Educational Organization

BY

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Inspector General of Schools.

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To the Hon. Thomas Walker, M.L.A., Minister of Education.

Sir,

In this, the second section of my Report, I have endeavoured to indicate the way in which our Educational System may be co-ordinated and completed. I have therefore dealt most fully with those portions of a more complete system which are at present least developed or altogether wanting. Continuation Schools for those who enter employment on reaching the age of 14 were dealt with in my former report. The greater part of the present section is devoted to High Schools, and to schools giving a shorter course than the High School for pupils who are not prepared to remain for the full course provided by the latter. The subject of Agricultural Education has been discussed at some length, because it is of great importance to our State at the present time, and because up to the present little has been done in this particular branch.

I have the honour to be, Sir,

Your obedient servant,

CECIL ANDREWS,

Inspector General of Schools.

16th February, 1912.

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Report upon Educational Organization.

A.—INTRODUCTION.

Huxley's famous phrase—"An educational ladder from the Kindergarten to the University"—is often quoted as summing up the ideal of a national system of education. For its fulfilment it presupposes organic connections between the Kindergarten and the Primary School, the Primary School and the Secondary School, the Secondary School and the University. What appeared revolutionary in England in Huxley's time was the second of these three connections. There was no great difficulty about the transfer from the Kindergarten to the Primary School, though much has been done since to make the transition from one to the other more natural, and the connection between the two more vital. The connection between the Secondary School and the University was generally recognised. But the connection between the Primary and the Secondary School was practically non-existent; they provided for different social classes, and the children who attended them had no common basis of education; they were separated from the beginning. The organization of the desired connection has been the main problem of the last twenty years in England. It is now in a fair way to solution there, and in many other countries it has to a great extent been solved. In Western Australia its solution is only beginning. In Australia generally it is only within the last few years that a real attempt has been made to provide this step in the ladder, to devise means by which the possibility of higher education shall be opened widely to those whose career in the Primary School indicates that they can profit by it.

In connection with this particular point, there are two matters to be considered. First there is the provision of a sufficient number of higher schools to meet the needs of the community. Secondly there is the organization for the transfer of children from the Primary to the Secondary Schools. What is the proper age for such transfer in the case of the average child? This is a question which has received many very different answers in different countries; a question which we must decide here, not by borrowing an answer from some other part of the world, but by considering it in the light of local needs and local conditions.

But the provision of stepping-stones by which it may be possible for any child of ability and diligence to rise from the Kindergarten

to the University will not give a complete national system of education. The complexity of modern demands makes necessary a great deal more than this. In the first place, there is a growing demand that even those who leave school earliest shall not end their education at the age of fourteen, but shall receive some further training and guidance at what is, in many ways, the most critical period of their lives. The meeting of this demand involves the establishment of Continuation Schools. In the second place there is the demand for consideration of those who are not prepared to go through a full course in a higher school, but are ready to remain at school a little beyond the compulsory age. In the third place there is a demand that the requirements of another class shall be met—those who are prepared to enter upon some definite course in a higher school, but who do not intend to go on to the University, and whose wants are not satisfied by the old-fashioned High School course. For this class vocational courses or vocational schools of various kinds are coming into existence—Day Industrial Schools, Trade Schools, Preparatory Technical Schools, Agricultural Schools, Commercial Schools, etc.—some aiming at direct preparation for a vocation, others at laying a foundation for higher work in Technical Schools or Colleges of various kinds. Then again there is the demand for the special recognition of the claims of women, for Schools of Domestic Economy or Home-making, and for higher courses in the same subjects in Colleges. Many of these demands are comparatively new, and are leading to experiments of different kinds to suit the varying domestic, social, and economic conditions of different countries.

It must be remembered too that the conception of the work of a University has altered very much in British communities since the time of Huxley. The University then was concerned mainly with knowledge for its own sake ; its aim was to give a wide general education which should enable its graduates to enter upon life with a taste for culture and with breadth of mental view. But it was not concerned with the direct application of knowledge to industry, nor, except in the case of a few special professions, with any immediate preparation for distinct practical vocations. It was still, in the main, as were the Secondary Schools, the preserve of a particular social class. In the meantime the idea of a University has become more democratic. It is no longer, in the general view, beneath its dignity for it to concern itself directly with applied science, with industries of all kinds, with commerce, and with domestic economy. The University is becoming a national institution ; it is more and more adapting itself to the needs of the people as a whole instead of to those of a class. The more the University expands in this way, the more numerous and varied will be the possible avenues of approach to it.

Our organization of education in Australia differs in one respect from that which is found in almost all other countries. Here the

whole cost of education in Public Schools throughout the State is borne by the Government and is provided for on the Revenue Estimates. Elsewhere a large proportion of the cost—often far the greater part—is borne by local taxation. Where an education rate is struck, to provide to a great extent for the cost of education in the particular locality, there is naturally a large amount of local control. This certainly has the effect of rousing distinct local interest ; the Schools are not Government institutions, but belong to the particular municipality or district ; every ratepayer has a direct interest in them. It might be thought that the result would be a disinclination for generous outlay of money, an addition to the rates being more immediately and directly felt by the individual than an increase in the general Government expenditure. This, however, at any rate where the units are of considerable size, does not appear to be the case. The spirit of emulation is aroused between neighbouring towns or districts ; one locality is unwilling to be behind another in making provision for the education of its children. The most lavish expenditure upon buildings—expenditure such as is absolutely unknown in Australia—and the most generous provision of higher schools of varied types, are to be found where the cost of education is largely borne by local funds. Where the rating units are small, there are no doubt greater difficulties ; sparsely populated districts generally require more generous State aid than those in which the population is dense. Nor are all the advantages on one side ; the teacher will nearly always prefer the more centralised system to one in which he is the servant of a small local body. The fact that our teachers are State civil servants, and have thus a fixity of tenure and a prospect of regular promotion, which are wanting where appointments and dismissals are in the hands of local bodies, probably accounts to a great extent for our securing a far larger proportion of men in the service than is the case in any part of Canada. The system of local control of education, and the support of education from the rates, has not come into existence in any of the States of Australia, and there does not appear to be any prospect of a change in this direction.

B.—THE CONNECTION BETWEEN PRIMARY AND SECONDARY SCHOOLS.

Primary Schools in most countries compel the attendance of children up to the age of 13 or 14 ; the latter age, which has been the limit of compulsion for many years in our own State, is coming to be generally adopted. Universities do not generally admit students under the age of 17 ; in many cases the usual age of admission is considerably higher. What is to be the nature of the intermediate work for those who are aiming at a University course ? At what age are they to be separated from those who have no such aim ? It is obvious that the answers to these questions must

depend very largely upon the ideals of the University is question, and upon the conditions of admission which it prescribes. They will, however, also depend to a great extent upon the social and economic conditions of the community.

When the conditions of entrance to a University demand a close acquaintance with Greek and Latin or with at least one ancient and one modern foreign language, the tendency is to separate those who are aiming at the University course at a very early stage. If such children remain at the Primary School until they have completed its course at the age of 14, without having learnt any foreign language, they will not have sufficient time to gain the required acquaintance with two or three languages before entering the University. If they were to attempt to do so, it would mean that the High School course would be mainly a course in foreign languages, and that the claims of our own literature, of mathematics, of science, of art, and of other subjects would necessarily receive little consideration. To teach another language besides the mother tongue in the Primary School would not be a satisfactory remedy ; except in countries that are to a great extent bilingual such a course is nowhere adopted. The many in the Primary School are not aiming at the University, and their interests cannot be sacrificed for the benefit of the few. The stage to which those who are not going to a higher school could attain in learning a language in the Primary School would not be sufficiently advanced to be of any real value or to justify the devotion of time to it. Hence comes the idea that the distinct course for those who are going to Secondary Schools should begin at a very early stage.

Germany.—In Germany the break from the Primary School course generally comes at the age of nine or ten ; a nine years' course is the rule in a Secondary School. Until within the last twenty years one type of Secondary School had exclusive privileges. This was the Gymnasium, in which a great part of the school time was given to the study of Latin and Greek. "Generally, in Germany. the door to all learned professions, including medicine, the public service, the Church, and the Law, was closed to all who had not passed through a University, and no one was admitted as a matriculated student at a University who had not passed the leaving examination which was conducted each year at the Gymnasia.

The Gymnasium then was not only a classical school but it was a school which practically all educated men were obliged to attend. In a country where, till recently, there has been no great career open through Parliament, in which commerce and business had not yet won for themselves the position that they have long had in England, attendance at the Gymnasium was practically the only opening (excluding the Army) to any position of importance ; every educated man who wished his sons to secure a proper position in the country was obliged to send them to a Gymnasium.* "

* Mr. T. W. Headlam, H.M.I., in Vol. 20 of "Special Reports on Educational Subjects," issued by the English Board of Education.

The most prominent feature in the history of German education in the last generation has been the rise of the "Modern Schools," and their struggle for equality with the Gymnasium. These schools are of two kinds, the Realgymnasia, which include Latin, French, and English, but no Greek, and the Realschulen, which include French and English, but neither Latin nor Greek. It was not until the end of the year 1900 that the three classes of school were, by a rescript of the Emperor, placed on an equal footing; students of all three can now enter the Universities, provided that they have completed the nine years' course and passed the final examination. The Schools of Theology are the only ones for which the Gymnasium course is still indispensable.

In the last few years there has been an important reform in a few of the Gymnasia and Realgymnasia in connection with the teaching of Latin. The regular plan in Prussia in both classes of school is to begin the teaching of Latin at once, and to devote to it nearly one-third of the school time for the first two years. In the third year French is begun, and in the fourth year a third foreign language—Greek in the Gymnasia, English in the Realgymnasia. In the Reform Schools French is begun in the first year, Latin is postponed until the fourth year, and the third language is not begun before the sixth year. If the Reform comes to be generally adopted, it will make the system more elastic, as the programmes for the first three years will not differ greatly in the three classes of school. Thus if a boy changes his mind as to his future occupation, a transfer up to the age of twelve will present no great difficulty. But even under the Reform plan there is no shortening of the Secondary School course; the break from the Primary School must come at the age of nine.

Under this rigid system a parent must decide once and for all, when his son is nine or ten years old, what his future is to be. If he does not go to a Secondary School at that age, his chance of reaching the University is gone for ever. Such an arrangement is only possible where the conditions of life are stable and settled; it is obviously unsuited to a new country where ups and downs of fortune are frequent, and a few good seasons or bad seasons make all the difference in a parent's views of his son's possible career. It is clearly also unsuited to a democratic country. In Germany generally class distinctions are very clearly marked, and their influence is very evident in the educational systems. There is really one sort of education for the "upper classes" and "middle classes," another for the "lower classes." Unless in very exceptional cases, the son will probably remain in the same station in life as his father has occupied before him. The son of the labourer or the small tradesman will remain in the Primary School up to thirteen or fourteen, and will become a labourer or a small tradesman; he will have practically no chance, whatever his abilities, of rising to a learned profession. While we can find much to admire in the thoroughness with which each class of school is organized,

it is evident that we shall not find here the model for Australia in the connection between the Primary School and the Secondary School which is to lead to the University.

Switzerland.—In Switzerland as a rule the Primary School provides a uniform course for all up to the age of 12. The boy who is aiming at a University must then enter a Secondary School for a seven years' course. The decision is thus postponed to some two or three years later than in Germany, but the total course is equally long. The fees in the Secondary Schools are generally very low, and there is a plentiful provision of free places. The system is thus a more democratic one than that of Germany. But entrance to the University involves a school course that lasts up to the age of nineteen, and the study of three languages in addition to the mother-tongue is generally required. The Cantons are not all alike in their systems, and in some of the Secondary Schools boys may enter from the Primary Schools at the age of ten.

England.—While the regulation of Secondary Schools is largely in the hands of Local Education Authorities throughout England, the Board of Education lays down certain conditions which must be fulfilled if a Secondary School is to receive a grant. "In order to be recognised as a Secondary School. . . a school must offer to each of its pupils a progressive course of general education . . . (with the requisite organization, curriculum, teaching staff, and equipment) of a kind and amount suitable for pupils of an age-range at least as wide as from 12 to 17. Provision made for pupils below the age of 12 must be similarly suitable, and in proper relation to the work done in the main portion of the School." Grants at a lower rate are made for pupils between 10 and 12 who have been two years at least in a Public Elementary School immediately before entering the Secondary School, and at a higher rate for pupils between 12 and 18.

The Board of Education, while insisting that the education to be provided by a Secondary School must begin at an age not exceeding 12, states that "the education of the Secondary School may, however, be advantageously begun at an age much below 12." It points out that "the transference of pupils from the Elementary to the Secondary School at an earlier age than 12 is encouraged by a grant paid on such pupils between 10 and 12 years of age."

Schools in which fees are charged must, as a condition of receiving the grant, offer a number of free places each year to pupils from Public Elementary Schools, so that 25 per cent. of the pupils are free. Candidates for these places "should as a rule be under 12, and the free places offered may be restricted in the first instance to candidates between 10 and 12, provided that any places not so filled up are then open to all qualified candidates between 12 and 13. Candidates over 13, if accepted, may properly be subjected to a severer test in respect of both subjects and standard . . . in order to prove their fitness to take a place in the Secondary School corresponding to their age."

Thus, while the general rule is to make the transfer before the age of 12, the system is not an absolutely rigid one, and older children can be admitted if they are fit to take their place in the school. As an illustration of the method which a Local Authority adopts in giving Scholarships to assist children to pass from the Primary to the Secondary Schools, the London scheme may be quoted.

Every child in the Elementary Schools of London, who has reached a certain standard by the age of 11, is required to sit for an examination in English and Arithmetic. On the result of this examination, combined with reports from the schools, 1,700 junior scholarships are awarded, tenable at Secondary Schools for 3 years, and renewable for 2 years more. (Those who fail to obtain them are eligible for some supplementary scholarships at 13). At 16 further "intermediate" scholarships are offered, enabling the holders to remain at school for two years more. At 18 senior scholarships are given, covering a three years' course in a University or Technical College.

This scheme applies only to scholarship-holders. The Secondary Schools are of course open to others as well, provided that the fees are paid.

The deliberate policy of the country is therefore that the Primary School pupil who intends to proceed to the University shall leave the Primary School before he is 12. But the child who does not leave at that age is not thereby absolutely debarred from entering a Secondary School at a later age, and so passing on to the University.

Scotland.—In Scotland there is a uniform system throughout the country. A child who reaches a standard about equivalent to our Fifth Standard is eligible for admission to a Higher School. After a five years' course in this school he may obtain a Leaving Certificate, which qualifies him for entrance to a University. The average age at which the former, or Qualifying Certificate, is gained is about $12\frac{1}{2}$, so that the Leaving Certificate would be obtained normally at about $17\frac{1}{2}$.

Under this scheme there is no competitive examination ; every child who reaches a normal standard may go on to a higher school. The Headmaster presents to the Inspector his list of the pupils whom he considers qualified, with their records ; the Inspector may accept the list as it stands, may hold such examination of individuals as he thinks fit, or may refuse to accept the candidates altogether if there is evidence of carelessness in promotion or selection. The requirements in English and Arithmetic are definitely prescribed, and the Inspector must be satisfied that the candidates are "reasonably proficient in the other subjects included in the approved scheme of work of the class."

The Leaving Certificate is granted after a written examination held by the Education Department with the assistance of a large staff of special examiners. These are two grades of papers, and a candidate must pass in four subjects on the Higher Grade

Standard, or in three on the higher and two on the lower. All candidates must pass in Higher English, and in either Higher or Lower Mathematics. The remaining subjects may be Science, with one or more languages, or languages only. But "Certificates will not be issued merely on the strength of the requisite number of passes in the written examination." The Department must be satisfied "that the course of instruction undergone by the candidate has been of adequate range and quality, and that proper attention has been paid to those elements of the curriculum that do not admit of being fully tested by written papers. The Inspector who visits the school will be instructed to inquire into and report . . . as to these points."

The Leaving Certificates of the Department are accepted, with certain provisos as to the subjects included, by the four Scottish Universities, by the Universities of Oxford, Cambridge, and London, the General Medical Council, the Army Council, the Pharmaceutical Society of Great Britain, and many other bodies in lieu of their own Preliminary Examinations. Almost all the Secondary Schools in Scotland submit candidates for these Certificates, and are in consequence inspected by the Department.

The schools in which pupils can qualify for the Leaving Certificate are in some cases free, but in most of them small fees are charged. The District Education Authorities (whose boundaries are generally those of counties) have special funds for providing bursaries to enable children from a distance to board in the neighbourhood of a Secondary School. The sums given vary according to the particular circumstances up to about £20 per annum.

The Scottish system is thus a very complete and uniform one. All children in the Primary Schools have a good chance of advancing to higher schools and so to the University, the general age for leaving the Primary School for this purpose being between 12 and 13.

Canada and United States.—In Canada, as in the United States, the transfer from the Primary to the Secondary School is postponed to a later stage than in any of the above-mentioned countries. The child who completes his Primary School course and thereby becomes eligible for admission to a High School, is generally over 14. Probably the average age is at least 14½, and many will be 15 on entering the four years' course in the High School. The boy who intends to take a University Course must be prepared to give his time to study up to the age of 22 or 23, while for many professions an additional course of post-graduate study has to be undertaken after this. If such a scheme is adopted, it means that those who aim at the University must be prepared to remain at school until they are nearly or quite nineteen, for there is no question of reducing the High School course below the four years' limit which is generally accepted as the minimum. The Special Committee of the National Association of State Universities, which met at Washington in November, 1908, in defining the principles

that should underlie the organization of the Standard American University, states as the first essential that it should be an institution "which requires for admission the completion of the curriculum of a standard American High School, with a four years' course." It also accepts four years as the length of the University Course for the Bachelor's Degree, making a total course of eight years from the time of the transfer from the Primary School.

The length of the course thus generally adopted has often been the subject of criticism, not only from outside, but from some of the ablest of American educational leaders. President Eliot, of Harvard University, has pointed out that "the highly-educated part of the American people does not increase the population at all, but, on the contrary, fails to reproduce itself." He traces this in part to "the late postponement of marriage on the part of educated young men, a postponement which the protracted education now prescribed for men who enter the learned and scientific professions makes almost unavoidable. The young physician, lawyer, engineer, or architect is now fortunate it he marries at twenty-eight or twenty-nine; whereas he should have married at twenty-five or twenty-six. To make earlier marriage possible is one of the strong inducements for bringing to an end the school course at seventeen or eighteen, the college course * at twenty or twenty-one, and the professional training at twenty-four or twenty-five."

If the desired shortening of the course is to be effected, it must involve an earlier transfer from the Primary to the Secondary School; for it is recognised that the course in the latter should not be less than four years.

Western Australia.—In considering the proper age for the transfer from the Primary to the Secondary School in our own State, there appear to be strong reasons against making it at an early stage. In the first place, ours is essentially a democratic community. It is desirable that the fundamental education should be common to all to as late a period as is consistent with efficient preparation for those who are aiming at the University, without sacrificing the interests of those whose objective is of quite a different character. An unduly early separation means, to a great extent, the establishment of a class distinction. Again, our country is, in the main, a newly-settled one; with the rapid growth of population and the development of industries the conditions are constantly shifting, and the possibilities that open to the younger generation are changing and widening. Our case is quite different from that of an old country with a settled population where the conditions are comparatively fixed and permanent. Early specialization is undesirable; our children should not be trained in narrow grooves for special purposes at an early stage, but should be as long as possible kept on broader lines which will make them adaptable to whatever

* The "College Course" means the ordinary University course for the Bachelor's Degree, as distinct from post-graduate specialized courses.

the future may bring. On the other hand, there is a danger in postponing the break too long. If the complete course that is necessary as a preparation for the University is prolonged too much, it means that it will be confined to an unduly small number. What the entrance requirements of our University will be is as yet unknown. It may be surmised that insistence upon the study of ancient languages for all students is improbable, and that a four years' course in a High School of reasonable standard will be sufficient. It may also be surmised that the average age for entering upon the University courses will be expected to be, at the lowest, over seventeen. It is with these considerations in view that in fixing the conditions for admission to the Modern School and for our Secondary School Scholarships, we have taken the completion of the Sixth Standard work in the Primary School as the requisite minimum. This is a point that should be reached by the average pupil at a little over thirteen. An earlier break is undesirable for the reasons given above; a later break is undesirable, if adequate preparation for the University is to be given, and if the course is not to be made longer than is really essential.

If this is accepted as the general policy, it should not be made too rigid. With our unsettled conditions and our scattered population it is advisable that there should be as much elasticity as possible. The child who is unable to enter a High School at thirteen should not thereby be totally debarred from the possibility of entering the University through the High School, if he can in any way be fitted to take his place in the latter at a later stage. The complete High School course will be preferable wherever it can be made possible, but entrance at some intermediate stage should not be entirely barred. The exact details of the necessary arrangements cannot be formulated until the entrance requirements of the University are known, especially in the matter of languages. But it is possible that in centres where the numbers are insufficient for the establishment of full High School courses, classes may be organised to cover as much as possible of the earlier portion of the High School work, so that removal to the more distant High School may be postponed to a later date.

C.—THE PROVISION AND ORGANIZATION OF HIGH SCHOOLS.

In visiting other countries no educational feature strikes the Australian more forcibly than the general acceptance of the necessity for public High Schools; that is, for High Schools supported either wholly or in part from public funds. The High School in a town of any size is considered as essential an institution as is the Primary School in a village. In many countries, wherever there is an aggregation of population that renders the formation of higher

classes possible, there is an immediate demand for such advantages. This applies not only to closely-settled countries with large populations, but also, in a great measure, to newly-settled lands where the conditions more nearly approximate our own. When the direct value of higher education is recognised, the inhabitant of the small town is not content with a system that confines High Schools to one or two of the larger centres ; he wants them within reach of his own home. " Our ideal," says the Director of Education for an English agricultural county, " is to have a Primary School within walking distance, and a Secondary School within driving distance, of everyone." Such an ideal is of course impossible of attainment in a country like ours. But this does not prevent us from feeling that a system where all facilities for higher education are confined to the metropolitan district is unsatisfactory. British Columbia offers in many ways a comparatively close parallel to Western Australia. Its total population is about 25 per cent. larger than ours, and is spread over a wide area. It has only two large centres, Vancouver (including New Westminster) with over 100,000, and Victoria, with about 35,000 people. The former has three High Schools, the latter one. But in addition to these there are 18 other High Schools scattered about the Province, though there is no other town with more than 5,000 people in it. The enrolment of High School pupils in these schools varies from 15 to 70. In addition there are 8 or 9 other schools in which the first two years of the High School course can be taken. All these schools are free. The people realise that there can be no wide opportunity for higher education unless such schools are brought within reach of all the smaller towns.

If there is to be a national system of education, the High School is, in many ways, one of the most important units. It affords the main connection between the lower schools and the University ; and the efficiency of the University must to a great extent depend upon the efficiency of the High School. The University cannot do good work without a supply of satisfactorily prepared students who have completed a High School course. The number of those who complete such a course here at present is not large. If our University were to insist, as the American Universities do, as a condition of entrance, upon the completion of the curriculum of a standard High School with a four years' course, such course beginning, as proposed above, from the point that an average child reaches at the age of 13 or 13½, the number of available students would at first be meagre. No doubt the coming into existence of a local University will prove a great stimulus in inducing pupils to complete the necessary preparation. But if it is recognised that it is in the interests of the State not merely to endeavour to meet the existing demand for such education, but actively to attempt to increase the demand or to create it where it is now non-existent, there must be a complete change in the present system. If the University is to reach as great a proportion of the people as possible,

higher education must be free to those who reach the required standard, and, as far as possible, the schools must be brought to the children instead of the children being brought to the schools. We shall always have large areas in which it will be impossible for the child to attend a High School while living at home. But it is possible to bring High Schools within the reach of a great many more than we have yet attempted to touch, without rendering it necessary for the children to board away from home. The High School in the country town ought to attract many parents who would not be able or willing to send their children away to Perth. Though it is true that the small High School cannot in every way be as efficient as the large one, its establishment will at any rate do something towards equalizing the opportunities of those who live in the smaller centres with the advantages of the dwellers in the large cities.

This aspect of the High School—as a preparatory training-ground for the University—is a very important one, but it is by no means a complete view. The number of High School students that proceed to the University is in most countries a minority. If the High School were considered to exist merely in the interests of this minority, there might be some ground for the old charge that the free High School is not really a democratic idea, but is a means of subsidising at the expense of the community a small class that can afford to continue the education of its children for a lengthy period. This objection, says a recent report from Manitoba, "rests on the misconception that such schools are for the benefit of the favoured few rather than for the many. As a matter of fact it is not the children of the rich who get the most out of the high schools of a country, but the children of the middle classes and the comparatively poor. The Secondary School is not inaptly called the 'poor man's university.' If properly organized it provides that culture which prepares for leadership, and it gives that special training which paves the way for entrance to the various departments of industrial and commercial life. More than this, it is the guarantee of efficiency in the elementary school; for the elementary school cannot stand alone, since it must look to the Secondary School for its teachers. The surest way to impair the efficiency of the Elementary School is to render inefficient those institutions which supply the teachers. This fact is becoming well recognised and in every progressive community the Secondary School is now looked upon as one of the first necessities." Another Canadian report, in justifying additions to the High School accommodation, insists upon the same point. "The chief agency for the preparation of the teacher is the Secondary School, and every move that strengthens it so that this preparation may be thorough and complete, contributes directly to the efficiency of the schools below."

This is a second aspect of the High School which is of the greatest possible importance to the community. It is the preparatory

training-ground for the teacher who is afterwards to receive his special professional training elsewhere, That a good general education is essential for the future teacher before he goes to the Training College, and that the High School is the natural place for the gaining of this general education, may seem obvious. But the almost entire lack of connection between Primary and Secondary Schools until quite recent years in England and in the Australian systems derived from England has prevented a recognition of these facts. The elementary school teacher who had been through a Secondary School was the exception ; the rule was one who had been through a Primary School and had immediately after entered upon a pupil-teachership. The immature candidate spent the whole of the school day in teaching, and was obliged to crowd his own studies into what time he could find in the early morning or the evening. Now the pupil-teacher is everywhere disappearing, if he has not already disappeared. The candidate for admission to a Training College is generally expected to have completed a course in a Secondary School. Such a condition is not merely desirable, it is absolutely necessary if the teaching in the elementary school is to be as efficient as it ought to be.

Ten years ago, when our Training College was opened, children were admitted at the age of $15\frac{1}{2}$, because there was no sort of provision for giving them a continued education elsewhere. The minimum age for entrance is now $17\frac{1}{2}$, and we are at length approaching the point where most of our candidates will have been through a four years' course in a High School. This point has been reached gradually by successive steps. It was of course impossible to sweep away at once the army of pupil-teachers, who formed nearly one-third of our regular teaching staff, or to provide at once fully satisfactory means of education for them. Apart from the financial difficulties involved in the reform, there was much opposition to be faced before the State undertook the provision of higher education. Still, in the scattered country schools, a modified form of the old pupil teachership presents the only opportunity for a child to begin his preparation for teaching. But to a great extent the old system has gone. We hope to be able to draw most of our future Training College Students from High Schools ; and it is desirable to encourage the entrance of those who have completed their course in Secondary Schools not controlled by the State as well as from our own. But we cannot give approximately equal opportunities to children all over the State who wish to prepare for the teaching profession until we have High Schools in other centres besides Perth.

So far we have considered the High School as a preparatory training ground for those who are to proceed from it to some institution in which they will gain further education, whether it be at the University or at a Training College. But this view, which has to a great extent dominated the work of High Schools in the past, is now generally admitted to be very incomplete.

Until recent years the general tendency has been to make most of the education in Secondary Schools purely cultural. Their programmes have been determined largely by the entrance examinations of Universities, or, in some countries, by the requirements of future teachers. But it must be realised that the greater number of pupils in most countries leave the Secondary Schools for immediate entrance upon their life work, not for further study. This has been to some extent recognised as far as commercial life is concerned : the organization of commercial classes presents comparatively little difficulty and demands no great expense. But there has been little provision for those who have made up their minds to enter upon industrial work, whether in city or in country industries. The consequence has been that such children have, as a rule, avoided the High School, and have failed to obtain any higher education. There is now a general and growing demand for provision of "vocational" education in High Schools to meet the needs of those who want education at this stage that will bear directly upon their future work. Why should technical education be almost entirely a matter for evening classes or for part-time schools ? Is not a fuller and wider education desirable for those who are to form the industrial and agricultural portions of the community ? Many of them will necessarily begin their work at once when they pass out of the Primary School, but would not many be prepared to take a further school course, if they could see that it had a direct bearing upon their vocation ? Is not the general idea of High School work too narrow ?

In the United States there has been a great movement in this direction in recent years. It began with the introduction of Manual Training into High Schools, at first rather from a belief in the general cultural value of hand-work, more lately with a directly industrial aim. " The Technical High School," according to the 1910 Report of the National Educational Association on the Place of Industries in Public Education, " is one for the preparation of pupils for positions in industrial life which require skill and technical knowledge, and are of greater importance and responsibility than those of skilled mechanics. The instruction deals with both manual operations, and with such direct application of the principles of science and mathematics to industrial work as will enable the student to master the fundamental processes and problems of the industries dealt with in the school ; but the instruction is not narrowly vocational."

The School at Springfield in Massachusetts may be cited as an example. Springfield, a town of some 80,000 inhabitants, has a Central High School which cost £80,000, and also a Technical High School which cost £56,000. The entrance qualifications are the same for both. The Technical High School offers three courses of instruction, each lasting for four years. The first is the College Preparatory Course, leading up to various Higher Technical Colleges. Drawing and Shop-work are included for all the boys, Domestic Science for all the girls. The Second is the General

Scientific Course for those who are going directly into industrial work. It includes general academic training, as well as instruction in mechanical drawing and wood and iron work, while in the third and fourth years specialization is permitted in the work of the drawing room and the shops. The Third Course is Commercial. "More than 60 per cent. of those who have been trained in the Technical High School are engaged in industrial employment of some kind, often in positions of leadership. Moreover, about 25 per cent. of the graduates of the Technical High School have taken College courses and are filling engineering positions of great responsibility."

More commonly, however, instead of the establishment of separate schools of this character, departments or "sides" of High Schools have been organized in which the outlook is industrial.

The need for industrial education of High School level is being widely felt in Canada also. The Dominion Government sent a Royal Commission to Europe in 1911 to inquire into and report upon the subject of industrial education. Its report is not yet published. From one Province comes the complaint that High Schools are regarded merely as leading up to Teachers' Certificates and Matriculation. As the teachers are almost entirely women, the result is that the High Schools are becoming Girls' Schools, and higher education is becoming confined to one sex. Again, an Inspector of High Schools calls attention "to the need there is of the adoption of technical training in these schools. The statistics show that for a great majority of the pupils these schools are the bridge between the elementary schools and their life-work. He is assured that many boys get very little out of the present curriculum, who would be helped to be much more valuable citizens if a course in technical training were open to them." In a recent report of another Province it is stated that "The demand is becoming more general that our schools shall be more than ever effective in fitting the youth of our country to meet the conditions of life which they will have to face when they step out of school into life. In this sense education must be made more practical. The boy or girl must be so trained that he or she may step into actual life with the least possible amount of re-adjustment. The schools which the present generation attended took little heed of the fact that 80 per cent. of our people must make their living by their hands ; that there were two different sexes to be trained ; or that there was a commercial and an industrial or mechanical side to our national life. The Secondary or High School at any rate, worked almost entirely for the professional classes. How very unjust this system is, many of us know, who, after many years spent in the schools, have been forced to leave and begin by ourselves in real earnest the preparation for actual life."

The principal obstacle to modernization, according to the Director of Education for Ontario, is the system of uniform examinations "which for over a quarter of a century have not only determined the character of the teaching, but have held in thrall the

pupils, the teachers, and the public. . . . . On the results of these examinations school boards and the general public appraise the teacher's competency." The question of external examinations based on requirements that have no relation to the courses of study adopted in particular schools will be discussed in a later section of this report : it will be sufficient here to say that in Australia, as in Canada, it has a very important bearing upon any effort that is made to enable the High School to suit its instruction to those who do not intend to proceed to further courses of study.

The High School then should provide a four years' course of instruction for those who intend to enter the University, for those who intend to become teachers, and for those who intend to enter commercial or industrial life. The provision of separate Commercial or Technical High Schools will only be possible in very large centres of population. Even in such cases there is much to be said against such a complete separation. In smaller centres an endeavour should be made to meet the needs of all these groups, as far as possible, by providing optional courses in the High School. The first two years' work may well be common, with the exception of a very few subjects, to all ; in the later portion of the course a considerable amount of specialization will be necessary.

Included in this last aspect of the province of the High School, viz., provision for those who will enter directly from the school upon their life's work, will be the domestic course for girls. Higher education for women should not be confined to those who are going on to the Uuiversity, to those who are about to become teachers, and to those who intend to adopt some definite profession. The needs of those whose career is to lie in the Home demand attention also. In addition to their cultural education, in which the claims of literature and art and science should be recognised, there should be training which will have a direct bearing upon their future vocation. Domestic Science is gaining an important place in the curriculum of the High School for Girls in all progressive countries. One of the principal obstacles again is the fetish of uniform external examinations. Parents who are under their thrall shrink from adopting the course that will be of most value to their daughters, if it does not fit in exactly with the programme of an examination held by a body that has no connection whatever with the life and work of the school.

In the Perth Modern School an attempt is being made to meet the various claims of the community upon the High School. Definite courses of four years' duration are established, the work of the first two years being to a great extent common to all. In the upper part of the School there is a division into groups, with a certain amount of specialization. The future University students and the future teachers have thier courses which are in many points distinct from the work of those who intend at once upon leaving the school to adopt some career for which special training in Science is desirable. There is a special course for Agricultural Students as well as a general

Science course which may lead to higher work in the University or in the Technical School. There is also provision for Domestic Science for Girls. Boys can take a regular course of Woodwork and Metalwork in the workshop, and of Drawing in connection with their practical work. As the school grows it may be found advisable to separate the more directly Technical and Industrial courses and deal with them in a separate institution. It is possible that in a few years time the demands for extension will best be met by the establishment of a Technical High School in the Technical School buildings.

The establishment of such schools as this is possible only in large centres of population. In Western Australia at present the Metropolitan District is probably the only one in which such a school could be maintained. But the recognition of this fact does not imply that no attempt can be made to provide higher education elsewhere. Something should be done for the smaller centres of population also.

Other countries have been confronted with similar problems and have grappled with them. The example of British Columbia has already been quoted. Manitoba is another example of a newly-settled province which is endeavouring to give higher education in many of its small centres. It has a population of about half a million. There are six regular High Schools with separate buildings. In fourteen other centres, where there are over 30 pupils who wish to go on beyond the Primary course, High School classes, with two or three special teachers, are attached to the local Primary School. In forty-seven other centres, where there are between ten and thirty such pupils, intermediate classes, taking the lower part of the High School work, are established. In the older provinces there has been a widely spread system of High Schools for generations. In Ontario, with about eight times our population, there are 146 High Schools, and 128 Primary Schools with High School classes attached to them. Quebec, with about seven times our population, has 236 High Schools. In the State of New York, which has a population of about ten millions, the belief in the value of a High School education is firmly established. There are about 1,000 High Schools, and three-quarters of these are in centres with a population of less than 5,000 apiece. In England and Scotland High Schools are now found in quite small country towns. In New Zealand wherever 20 children are found who wish to go beyond the Primary Course, a District High School is established. This is under the Headmaster of the Primary School, but must have a separate room or rooms and a separate staff. When the numbers exceed 60, a distinct High School may be established. The Dominion has more than 100 High Schools of the two classes taken together. South Australia has adopted a somewhat similar system of free High Schools in small centres. New South Wales has free District Secondary Schools in all the more important towns: wherever possible, they are now being organized as High Schools with a

full four years' course. Victoria has within the last six or seven years established High Schools in many centres throughout the State. In Queensland ten High Schools have existed for many years and have received subsidies from the State. To meet the needs of other centres the Government has just established six new High Schools entirely supported by the State, and without fees. Opportunities for higher education are thus being provided throughout the other States of the Commonwealth.

Here we have one really large centre of population—in Kalgoorlie and Boulder—without any High School. There should be sufficient numbers available here for the establishment of a separate school. The Primary Schools of the District contain some 4,500 children, and the numbers of those who remain beyond the compulsory age are increasing. There would no doubt be a further increase if a definite High School course could be offered them. At present we have promising pupils remaining to the age of fifteen and wishing to become teachers. There is no local school available for them to give them the necessary further course that will render them eligible for entrance to the Training College. Scholarships to take them to a school nearly 400 miles away are not a satisfactory substitute for a school within reach of their own homes. Even if they were a satisfactory substitute, they are available only for a limited number of candidates, not for all who are able and willing to profit by opportunities of higher education.

After Kalgoorlie and Boulder, there are several smaller centres that deserve consideration. In such towns as Northam, Bunbury, Geraldton, Albany, and Collie, it would not at first be necessary to establish separate High Schools in separate buildings. It would be sufficient for a time to establish separate classes under special teachers in connection with the existing Primary Schools. When the number of pupils enrolled in such classes reaches a certain limit, the question of the establishment of a separate High School should be considered. In the meantime the work of these upper classes should not be a mere continuation of the work of the Primary School. They should begin upon a distinct course, which should approximate as nearly as possible to the lower part of the High School course. It would then be possible for a pupil from a centre where the demand for higher work is insufficient to justify the provision of a full four years' course, to take at any rate the first two years in the neighbourhood of his own home, and to migrate to a larger centre for a short period only. While such a course will not be so satisfactory as the full four years' course in a single school which is fully equipped and staffed to deal with large numbers, it will be a great improvement upon the opportunities that are now open to the residents in the smaller towns. The prospect of the establishment of a full High School when the numbers are sufficient will be an inducement to the residents to keep their children longer at school, if they can be convinced of the value of the higher education. While the programmes of work should correspond

generally to the earlier part of the full High School course, there should not be an absolute uniformity of curriculum prescribed. The particular needs and conditions of each community should be taken into consideration when the course of study is framed.

The supply of duly qualified teachers for the higher work may present some difficulty at first. Such posts in many countries are filled almost entirely by University graduates. With the establishment of our University the difficulty should gradually disappear. In the meantime we must continue to do as other countries do under similar conditions of new settlement and rapid growth; we must, where we cannot supply our own wants, continue to draw from older countries where the opportunities for higher education are more widely spread. To postpone the establishment of Intermediate and High Schools until we can supply our own needs entirely is to defeat the end in view. If we are to secure a constant supply of University students and of highly-trained teachers we must extend as widely as possible the facilities for secondary education, and endeavour to secure for those who live in the smaller towns, as far as circumstances will permit, equality of opportunity with those who live in the Metropolitan area.

D.—PROVISION FOR THOSE WHO DO NOT ENTER A HIGH SCHOOL.

The pupils of the Primary School who go on to a High School for the full course will, probably always, at any rate until such time as conditions are very greatly changed, be the minority. The needs of the majority have still to be considered.

When we have High Schools provided in sufficient number to allow the opportunity of entrance to all those who reach an adequate standard of attainment, the child of 13 or 13½ will have to make the choice between entering upon the longer course or definitely choosing a shorter course. There will always be a large number who will leave school and begin to earn their living as soon as the age is reached when attendance ceases to be compulsory. There will also be a considerable number who will be ready to stay for at least two years after passing the Sixth Standard. The number of those who now remain for this period in our Central and other schools is not of course a fair criterion of those who will eventually come under this heading: many of them would no doubt be ready to enter High Schools, if such were available within easy distance and without fees. But there will still remain many who are not prepared to stay at school for the time required by the full High School course, but who wish for the advantage of some further definite education before entering upon their life's work. The number of these is likely to be an increasing one as the value of further education becomes more widely recognised. That its increase is desirable scarcely needs argument. It is the period of

rapid development when the child is beginning to be conscious of new powers, and to appreciate the value and the bearing of his education. There is no time in his life when education is likely to have such definite and permanent results upon his future character and career, no time when it may be more directly fruitful in leading him to become a valuable member of the community. But a large increase in the numbers that will avail themselves of it will depend very much upon the nature and character of the courses that are offered to them.

If the upper portion of the Primary School, which is intended for those who do not go to a High School, is to be satisfactorily organized, it is necessary that its aims should be clear and distinct. Such satisfactory organization only becomes possible when the provision of High Schools is general and offers opportunity for entrance to all who are qualified. Then the upper part of the Primary School will have a fairly definite group of children to deal with, and can be shaped to meet their needs. Until this is the case there is no definiteness about its aim ; it is endeavouring to give some form of higher instruction to a heterogeneous collection of children. There is no higher class of free education provided, and it is therefore endeavouring in some degree, though in an inadequate and mutilated way, to take the place of a High School. When future High School pupils generally and regularly diverge from the others at about the age of $13\frac{1}{2}$, the question of some degree of specialization in the education of the remainder can be profitably considered.

Too early specialization is frequently and rightly deprecated. But no single general answer is possible when the question is asked at what age specialization should begin. The answer must depend for each group upon the total length of the course of education that it is intended to undergo. In many American Universities complete specialization—as, for instance, in the Medical School—is not permitted until the ordinary Bachelor's Degree has been taken. The preliminary work for this degree will of course have been largely determined in its choice of subjects by the final aim ; but it will for the greater part have been common to those destined for other professions besides the medical. The training of the teacher again must of necessity be a lengthy process. In consideration of this it is now universally agreed that the system of early specialization which was common in many countries until recent years, and under which the future teacher of a Primary School was separated at the age of 13 or 14 from those destined for any other calling, was unsound, and had a narrowing tendency. But it would be quite illogical to argue from such instances that no specialization at all is permissible for those whose education is not to be prolonged beyond the age of 15 or 16. Education ought to be a preparation for life ; as soon as the child enters upon his life's work, if it is anything but the most indefinite and unsatisfactory form of un-

skilled employment he at once and of necessity specializes. It is surely not unreasonable to hold that the latter part of his school education should as far as possible have some bearing upon his future work.

In the High School, where the pupil enters upon a four years' course, the first two years' work may well be of a general and preparatory nature, and some degree of specialization be reserved for the third and fourth years. But the pupil who is to leave school earlier should begin to specialize earlier. This is in reality the main underlying reason for separating the two groups. The first two years of the High School course do not form an ideal finishing point ; they are intended to be preparatory to something further. It is very doubtful, for instance, whether the time that is devoted in these years to foreign languages is fully justified unless the pupil is going to carry on his study of them to a higher standard. The child who is going to leave school at 15 needs a different course.

The group that remains when the High School pupils have been separated consists mainly of those who will enter commercial life and those who will be enrolled in some industrial calling, apart from the girls who are destined for domestic careers. Narrow specialization in the direction of particular trades is of course not the province of the upper part of the Primary School, but some broad differentiation on these lines may well be attempted. The upper classes of our Central Schools might divide broadly into industrial, commercial, and domestic courses—assuming, of course, that the High Schools have already taken away those who are prepared to stay for four years. The organization of optional or alternative courses no doubt brings some complications. In the largest centres of population it may be greatly simplified by confining a single school to a single course. The pupils who want the industrial course would attend one school, those who want the commercial course would attend another. Where this is impossible, there is a good deal that would be common to both courses. The industrial course would give greater attention to manual work, drawing, elementary science and practical mathematics ; the commercial course to trade—history, and geography, bookkeeping, and business principles. But both should include a good deal of general education.

As far as possible the course for every group of children should be made to have a possible connection with something further. The children who leave school as soon as they reach the age of 14 should have Continuation Schools provided for them, as suggested in my previous Report, which should lead up to Trade Classes or Commercial Classes in the Technical School or other institutions provided for the purpose. Those who remain for a full two-years' course beyond the Sixth Standard should be ready to enter such Trade Classes or Commercial Classes without passing through the preparatory stage of the Continuation School. In fact, the upper

part of the Central Schools should be true Continuation Schools, far more efficient than the part-time Continuation Schools can ever be, and bringing their pupils to a higher level in the subsequent classes than the part-time schools can do at the same age. Their courses of study should be so arranged as to connect directly with the courses of the Technical School at a particular grade.

In Scotland, as has been already mentioned, the "Qualifying Certificate," which marks the first point of divergence in the educational scheme, is generally obtained at about the age of 12½. This entitles the holder to enter a higher school, either a High School with a full five years' course leading to the "Leaving Certificate," which qualifies for the University, or a higher grade school with a three years' course, leading to the Intermediate Certificate. If he is not prepared to take a course of this length, he remains in the upper part of the Primary School, in what are known as the "Supplementary Courses." These courses continue his general education, but have a bias in a particular direction, either industrial or commercial or domestic or rural. The first three are generally organized in the large towns; the course with the rural bias has been less generally and completely worked out. This scheme depends upon the separation of the High School pupil at an earlier age than is proposed here, and draws a distinction between the Higher Grade School, with a course ending at about 15½, and the Supplementary Courses, ending at 14. In some cases the Higher Grade School expands into a High School and takes its pupils through the full course for a Leaving Certificate; in other cases the Intermediate Certificate of the Higher Grade School qualifies the holder to enter the upper part of a High School. While our Central Schools would, according to the foregoing proposals, largely take the place of the Supplementary Courses, though with pupils of a somewhat more advanced age, it may be found advisable in certain cases, until High Schools are available in the immediate neighbourhood, to arrange for them to take a course more closely approaching the lower course of the High School, in order that pupils may be transferred to the latter at a later age and may avoid the necessity of leaving home for the whole period covered by the High School course.

Some system of Intermediate Schools of this kind, offering a fairly general education of shorter duration to those who cannot take the full High School course, is found in all countries were there has been much educational development. Germany has its Middle Schools, providing education of an intermediate nature for those who remain in the Primary Schools beyond the first bifurcation. In Switzerland similar schools are found under a different name, generally connecting with distinctly Technical Institutions. In England there has been a great increase of schools of various kinds providing for those whose education will cease at 15 or 16. Many of them are lower-grade Secondary Schools, providing a four years'

course from the age of 12. But in recent years there has arisen a general demand, which is rapidly increasing, for more specialized types of schools intended for pupils of this age. This has led in some cases to the provision of Day Industrial Schools or Preparatory Trade Schools.

In Leeds a Day Preparatory Trade School has now been working for six years. It takes boys of 13 years of age, and gives them a two years' course of instruction, mainly as a preparation for those who intend to enter engineering works. The course is designed with the object of improving the general education, developing common sense and reasoning power, and enabling a boy to acquire the necessary manual dexterity to ensure that he shall be put at once on useful work when he enters the shops." The boy is able to see more of different kinds of work and processes than he can do, as a rule, when he enters some particular department of engineering works. At the same time he is often found to possess ability in some particular direction which enables him to choose the branch for which he is best fitted. "When the time comes for him to be drafted into the particular shop or office selected, he goes with a clear understanding of what is before him, and with a mind fully prepared to master all the intricacies of his craft in record time." The course includes Practical Mathematics, Mechanics, Technical Drawing, Metalwork, Woodwork, English, and Drill; in the second year a limited amount of specialization is encouraged. Ninety per cent. of the pupils obtain good employment at once on the strength of their school records of work.

A somewhat similar school in Halifax aims at preparatory training of boys who intend to be apprentices in any of the local trades. It has a three years' course, the first years' work being common to all. In the second year the drawing and workshop practice are specialized to some extent according to the intended trade of the pupils, and in the third year this specialization is carried much further.. The school does not claim to teach a trade, but to meet the deficiency caused by the narrowed training of apprentices, which makes it impossible for them to acquire in their employment an all round knowledge of their trade.

In the Leeds School a fee of £1 1s. per annum is charged.; in the Halifax School the fee is £3 per annum, but half the places may be free. In both schools all the necessary books, tools, instruments, and apparatus are provided free. Both are comparatively small schools, the enrolment not exceeding 60 or 70 pupils.

The aim of such schools is really identical with that of the Evening Continuation Schools. But the school that can obtain the boy for the whole of his time for two years is naturally far more effective than that which secures him only for a few hours per week in the evening. With the increase of engineering works and allied industries here the possibility of the establishment of such a school, either in connection with the Perth Technical School,

or at Midland Junction, may be seriously considered before many years have passed.

To sum up—the organization of satisfactory Intermediate Schools or Classes becomes possible when there is an adequate provision of High Schools. The function of such schools then becomes clear and distinct. They are to provide for those who are not prepared to undertake the full High School Course. Some of them will remain only for one year, but every effort should be made to encourage them to take a two years' course. The present system of bursaries should be adapted and extended for this purpose. The course should not be a mere continuation of the work of the Primary School, but should bring the pupil to face his subjects in a new light—in their bearing upon his future life's work. There should therefore, as in the Evening Continuation Classes, be a broad differentiation for the industrial, commercial, and domestic groups. The pupil should be enabled to enter upon his life's work with some elementary acquaintance with the problems that lie before him, and with an intelligent interest in his new surroundings and conditions. He will not then be in an entirely strange environment, in which he is unable to see the relation of his particular piece of work to the general scheme. Some knowledge of elementary mechanics and elementary chemistry; of trade arithmetic and trade drawing; of the distribution of raw materials, of manufactures, and of industries; and of the actual handling of tools, will give a boy an excellent opportunity of becoming a thorough, skilled and competent workman in whatever industry he selects. In the same way some knowledge of elementary economics and business principles; of commercial arithmetic; of the distribution of trade and products; and of the methods of transport and communication, will give a boy an excellent opportunity of becoming a really skilled and intelligent member of any commercial staff. So, too, some knowledge of hygiene and elementary chemistry; of household accounts; of cookery, laundry, and general housewifery; of the care of children; and of sick-nursing, will give a girl an opportunity of ordering her home on healthy and intelligent principles which will be in accordance with the truest economy. Will not such courses be of infinitely greater service to the individual and to the State, for children whose school careers are to end at about the age of 15, than courses designed to enable them to pass the Junior Examination of Adelaide University?

E.—AGRICULTURAL EDUCATION.

I.—The Work of the Primary School.

It is generally agreed that the Primary School can do much valuable work in preparation for Agricultural Education, but what the exact limits of this work should be is a question upon

which considerable differences of opinion still exist. Nature Study originally claimed a place in the curriculum of the Primary School on quite other grounds. It came as part of the movement towards making primary education less exclusively bookish, more closely connected with the realities of the child's daily environment, and better fitted to take advantage of the child's natural interests. It was a field in which the children could be active, not merely receptive ; in which they could do things for themselves and find out things for themselves in connection with matters in which they were really interested. It was part of the same movement that brought into prominence the claims of manual work. But it was clear that Nature Study might bring with it many subsidiary advantages. It might lead to the love of the beautiful and to the improvement of both school and home surroundings, and to respect for and care of both plant and animal life. These considerations could apply to town children as well as to country children, though they would be of greater significance in the life of the latter. It might also form a good foundation for subsequent work in almost any science ; but the sciences to which it could most easily and naturally lead are those connected with Agriculture. It might also give an intelligent interest in country life which would do much to counteract the flow of population from the country to the city.

Nature Study then is of peculiar value to the country child in connection with the foundations of Agricultural Education. Whether the Primary School should confine itself to Nature Study or should attempt any definite course in Elementary Agriculture is a question upon which there is yet no general agreement. Professor Liberty Bailey, the Director of the New York State College of Agriculture in Cornell University, who was one of the pioneers of the Nature Study movement, and has carried on a vigorous and successful campaign in this connection for the last fifteen years in the Schools of his State, holds that Elementary Agriculture should be reserved for higher schools, and that the wider Nature Study should alone find a place in the Primary School curriculum. " Nature Study is preferred to elementary agriculture, because it involves the intelligent observation of all the environment, and thus trains the qualities desirable in every human being and applicable to all branches of study. Again, it builds on the sympathies of the little child, which lie more with the wild and beautiful in nature than with the useful ; and thus it lays a strong foundation for that true nature-sympathy which can raise the farmer's life above sordid interests." * On the other hand, many of the States encourage the direct teaching of elementary agriculture in the Primary Schools —in some cases beginning even with children of nine. If there is a danger, in the case of Nature Study, of loose, vague, and hap-

* From an Educational Pamphlet, published by the English Board of Education on " The Problem of Rural Schools and Teachers in North America."

hazard work where the teacher with no special knowledge is out of reach of any skilled guidance, there is also a danger in the teaching of elementary agriculture of narrow formal teaching too closely connected with the text-book and too little connected with what is real. "This adoption of elementary agricultural problems instead of wider nature study has the merit of definiteness, and ensures more exact scientific treatment. On the other hand, the limitation of subject-matter is fatal to interest of the highest kind, and tends to develop a merely utilitarian attitude to the world." * When one finds a text-book on agriculture prescribed for the children in the Primary School, and such directions as the following in the Course of Study :—"The condition of the soil as to fertility, drainage, composition, crop rotation, etc., should receive careful attention . . . Discuss in class such topics as the classification of farm animals, according to the principles given in text"—one cannot help feeling that there must be a danger of the work being largely unreal, of little educational value, and of no great interest to the child. The further direction—"encourage children to experiment in the feeding of animals for specific results in growth," opens avenues of possibly great interest, but hardly strikes one as practical in the Primary School.

But while anything like a systematic acquaintance with the principles and practice of the science of agriculture may well be left for higher schools, there is a great deal that can be taken in the Primary Schools without a narrow limitation of the subject-matter that may be correctly called elementary agriculture. The children can become acquainted with the life-history of plants of various types, including their methods of reproduction, partly by observation of the plants in their natural surroundings, partly by cultivation in the school garden. In the latter too they can gain an acquaintance with many of the principles of cultivation, with the preparation of the soil, the sowing of the seed, the keeping of the soil in good condition, the effects of mulching, etc. They may carry out simple experiments in sowing seeds at different depths ; in preparing plots of ground in different ways for similar crops ; in comparing the results of plots kept free from weeds with those of plots where weeds are allowed to grow ; in contrasting the crop of wheat from a pure strain of seed where the plants are of uniform height and all ripen together with the irregular crop from the mixed seed that is often supplied—and in many other directions. They may be trained to observe the weather, they may become acquainted with the noxious weeds of the district, and with the birds and insects that are useful or harmful to the farmer. They should gain their knowledge by actual observation of and contact with the real things, and by carrying out for themselves the necessary processes. The School Garden that has now become in Western Australia one of the normal adjuncts of a school, and the experimental plots which are to be found every year in

* Id.

increasing numbers, can do a very important work in putting the future farmer into the right attitude with regard to his profession. In them the child learns something of the wonder and the interest of plant life, he sees enough to convince him that there is plenty of room in the farmer's work for the exercise of brains and intelligence, that it is not a matter of mere rule of thumb or imitation, and that the choice of the method most suitable to the particular conditions may make an enormous difference in the result.

Such work as this is being attempted, with varying success, in most of our small country schools. In considering whether anything more systematic should be undertaken in the Primary Schools we have to remember the conditions under which they are working. The agricultural population here is comparatively a sparse one ; farms are of much larger area than is the case in many other countries. In consequence we have a great number of very small schools in the farming districts, in most cases each under a single teacher. In a few of the country towns, where there are larger schools with several teachers, it may be possible to arrange more definite courses for the older children, which will correspond to the commercial and industrial courses that can be organised in the towns. In such cases there should be an expert teacher, who has had a proper training in this particular work. Up to the present the number of such teachers in the service has naturally been small ; there are no means of training them in the State. With the establishment of our University, which is to include a Faculty of Agriculture, we may hope for a great improvement in this direction.

As far as the small schools are concerned, the average teacher cannot be expected to be an expert in agriculture, and there is always a danger in an untrained teacher, however enthusiastic, attempting an ambitious scheme. There is a possibility of his failing to realize the extreme complexity of the conditions involved in what may appear to be simple experiments, and of his drawing deductions which the expert will see to be incorrect from data which the expert will see to be insufficient. Many experiments are needed, and all possible sources of error must be eliminated, before satisfacotry general conclusions can be reached. Expert advice and guidance are necessary, and there is need of great caution in such work if incorrect deductions are to be avoided. Knowledge of books is insufficient without practical experience. Systematic teaching of agriculture and experiments of a complicated nature are work for specially trained teachers. Where these are not available, the Primary Schools can do, and are doing, much preparatory work that is of great value. The Department employs an officer specially for the organization of such work, and his advice can always be obtained by any teacher. He communicates with all the schools every month by means of the *Education Circular*, visits as many individual schools as possible, and from time to time collects together groups of teachers for special instruction.

In addition to the Nature Study, the extension of the teaching of Woodwork to small country schools, which has been begun during the last year, should be of great service to the future farmer in giving manual dexterity and a knowledge of the simple principles of construction. The courses of work to be undertaken in those schools where it has been introduced will be distinct from those taken in the large towns, and will bear directly upon the needs of country life.

II.—Higher School Work.

Agricultural Colleges of various kinds have long been in existence in many countries. Students in such Colleges are generally at least 17 years of age when they enter, and are expected to have acquired some practical knowledge of farm work beforehand. It is, however, often found that the educational gap existing between the Primary School and the Agricultural College is a great drawback. The student may come to the College equipped with a considerable knowledge of the ordinary farm operations, but weak in his powers of expression and in the use of his own language, limited in his reading and general information, without an acquaintance with elementary science, and requiring much training in comparatively elementary work in arithmetic. The value of the practical acquaintance with agricultural operations that he has gained in the preceding years is greatly discounted by the fact that his general education has ceased too soon. The problem is to discover the best method of continuing his general education and at the same time giving him some acquaintance with his special work.

Any solutions of this problem that may be offered must take into consideration, as in the case of other branches of education, the total length of the course of training that the student is prepared to undergo. If the future farmer is ready to remain for the complete four years' course of a High School, there can be little doubt that it will be of great advantage to him. The farmer's profession is a highly intellectual one, and calls for the exercise of a highly trained mind. The value of a good broad general education is as great in his case as in that of many other professions. The "People's High Schools" that have wrought such a revolution in the agricultural prosperity of Denmark are in the main not special technical agricultural schools, but schools for general culture. There are also a few special agricultural schools; in them it is reported that "the better half of the students, those who seize most completely and apply most readily what they learn there, have first been students of history and literature in the ordinary High School." Interesting testimony in the same direction comes from a report of the Acting Director of the New York State College of Agriculture at Cornell University. The High Schools of the State are now rapidly adopting Agricultural Courses, but the movement is quite a recent one. The High School education referred to in the quotation below is mainly, therefore, of the unspecialized type.

Value of Higher Education to the Farmer.

"In connection with the farm management investigations of the College, some very suggestive evidence has been secured showing the money value of education in farming. In a number of townships all of the farms were visited and accurate data obtained from the farmer showing his income from his own labour. In deriving the farmer's labour income, from the gross receipts there were deducted all expenses, including those for labour other than that of the farmer himself, five per cent. interest on capital invested and a charge for depreciation in apparatus, tools, etc. Record was also made of the highest school the farmer had attended. Complete data were secured from 573 men. The results were as follows :—

——	Number of farmers.	Average labour income.
		£
Attended District School only *	398	63
Attended High School or equivalent ..	165	124
Attended College or University	10	169

It might be assumed that these differences were due to the High School men having had better farm opportunities. To eliminate this difference, the farms were arranged in groups having equal capital :—

Capital.	Average labour income of farmers with district school education.	Average labour income of farmers with more than district school education.
£	£	£
400 and under	37	57
401 to 800	48	55
801 to 1,200	79	93
1,201 to 1,600..	79	142
1,601 to 2,000	123	159
2,001 to 3,000	105	218
Over 3,000	211	254

From this table it appears that in every group the men having the highest education made the best use of their capital. From the first table we see that there is an increase of £61 per year in labour income of those men who have attended High Schools. Therefore we may conclude that 'a High School education is worth more to these farmers than an endowment of £1,200 in 5 per cent. bonds.' ",

* *i.e.*, Primary,

A broad general education is thus shown to be of great value to the farmer in countries of such widely differing conditions as Denmark and the State of New York. But the movement which has been already mentioned in connection with commerce and industry, the movement towards vocational courses in the High School, so as to bring the work of its upper classes into more direct connection with the future life-work of its pupils, is strongly marked also in the field of agriculture. A belief in the value of the general High School course is so widely spread in the State of New York that 25 per cent. of its farmers are said to have been through the High Schools. But this number is increasing, and is expected to continue to increase, with the introduction of agricultural courses in the High Schools. This change is being brought about rapidly now all over the United States. The experiment is comparatively new ; it is too early yet to gauge the results ; but those concerned have no doubt of its success. Canada is moving in the same direction, but, so far as can be judged from reports and from a very brief visit, her High Schools are less free than most of those in the States from uniform courses of study and uniform examinations. In Ontario, where magnificent work is being done by the Agricultural College, the first results of the establishment of agricultural courses in High Schools have been very disappointing, the number of students joining them being extremely small. The Report for 1910 of the Professor of Nature Study in the Ontario Agricultural College points to the cause. " One of the chief drawbacks to our teachers' carrying out instructions in Agriculture lies in the public attitude towards examinations. Education and passing examinations are apparently synonymous terms in a great many places yet." He quotes the following as a typical statement from a teacher.—" To be strictly honest, I must say that neither the pupils nor the parents seemed to have any desire to have agriculture taught in the school. The one aim of the parents was to have the children pass examinations, and of course agriculture did not contribute to that end."

But the fact that this change in the High School work is not immediately successful in this instance does not prove that it is in any way wrong in principle. The Ontario farmer has been accustomed to the system under which the boy, on leaving the Primary School, stays for two or three years upon the farm and then takes a course in the College. It will naturally take a little time to convince him that the High School is a desirable step in his son's career. The High School pupils already in the schools have mostly entered with other aims, and are not likely to change their views immediately. But the filling up of the educational gap between the Primary School and the Agricultural College is of the utmost importance.

An Agricultural Course has been instituted here in the Perth Modern School, the specialized work being restricted to the third and fourth years. The pupils continue their work in English Composition and Literature ; practically all the remainder of their

studies bears upon Agriculture. They have a course of Bookkeeping ; a course in Mathematics, with special application to farm machinery, buildings, and mensuration ; courses in Woodwork, Metalwork, and Mechanical Drawing with special reference to the needs of the farmer ; and courses in Chemistry, Botany, and Biology, as bearing upon Agriculture. There is also direct instruction in the Theory of Agriculture, and, as far as possible, in its Practice. Experimental plots in the school grounds are used for this purpose, and excursions are made to farms, orchards, and vineyards. In addition the pupils go through a course in First Aid and Ambulance Work. The numbers during the first year were small, but as the course becomes more widely known there is good reason to hope that they will increase.

Students who will take a full High School course, including the Agricultural work, will no doubt provide candidates for the full Degree course of the Agricultural Faculty of the University. But such students will not be more than a small minority of our future farmers. What is to be done for those who are prepared to take only a shorter course, perhaps for two years after leaving the Primary School ? If a suitable scheme can be framed for them, and they can be induced to continue their education in this way, many of them may be prepared to come to the University later for a shorter Diploma course.

Our conditions here differ so widely from those of Canada and the northern United States that our problem is really quite distinct from theirs. With them there is an almost complete cessation of farm work through the winter months, while the cereal and fodder crops, grown in the summer, mature with great rapidity. In some districts wheat is actually harvested in ninety days from the time of sowing. Courses in the Agricultural Colleges generally extend over not more than 30 weeks, from September to April or May. A boy can thus attend the full course in the College, and yet be at home on the farm for seed-time, haying, and harvest. It is there comparatively easy for the farmer to spare his son for higher education. In the Eastern Provinces of Canada and in the adjoining States, where farming has been carried on for generations, there are well stocked and well-cultivated farms in all directions on which the boy can gain his practical experience. Settlement is comparatively close ; it is often easy for the boy to live at home on the farm and yet attend a High School. In such districts, too, the land suitable for farming is already all occupied. The State of New York has nearly a quarter of a million farms, and has no room for more ; with the constant improvements in labour-saving machinery the number of men needed for agriculture tends to decrease, though production increases. The future farmers come almost entirely from the farming population, and get their practical experience in their homes. There is no demand on the part of city boys for training to fit them for the land. In the Western Provinces of Canada the conditions, except those dependent upon climatic

causes, more nearly resemble our own, but the problem of agricultural education immediately above the Primary School remains unsolved.

In our State it is far more difficult for the farmer to spare his son, as there is no long period in the year when farm work ceases. Owing to the scattered nature of our settlement, it is not possible for the boy to attend a High School while he lives on the farm. Many of the farmers are beginners with no very great amount of agricultural experience themselves ; the boy who remains on the farm does not therefore get a very complete or advanced training in agricultural work. No doubt there are many who would be prepared to give their boys some further education, if they could be sure that it would be on practical lines under expert teachers, and would ensure for their sons a chance of coming to the farm work with greater knowledge and fuller technical training than their fathers possess. Then, too, with us an increase of the agricultural population is greatly to be desired ; our lands are far from being fully occupied. There are many residents in our coastal towns and also many in our mining towns who would be glad of an opportunity of getting their sons trained for the land. Neither the country boy nor the city boy can obtain such training while he remains at home, and boarding schools are the only means of meeting the demand.

The establishment of boarding schools necessarily involves heavy expenditure, if buildings have to be erected. If the schools are to combine really practical work in agriculture with general education, they must have farms attached to them. To provide and stock such farms and arrange for their cultivation involves further heavy expenditure. I saw one such school in England, at West Lavington in Wiltshire, which appears to be the only one of its kind. The buildings cost about £12,000 ; the accommodation is for 50 boarders. There is a staff of four masters ; seven servants and two agricultural labourers are employed. The fees are between £30 and £40 a year, but they do not cover half the cost of the school. The area of land attached is very small—only a few acres—and the practical work is mainly confined to fruit and vegetables, with experimental plots for cereals. A much larger area is needed if anything like a complete training in farm work is to be given.

The heavy expenditure involved in the establishment of such schools would be a serious obstacle in our State at the present time. But a solution may be found in the utilization of the existing State Farms. The necessary boarding accommodation has, in at least two instances, at Chapman and Narrogin, been already provided, but has never been fully used. Comparatively slight expenditure would be necessary for the adaptation of these buildings to the purposes of a school. The farms are already there. If boys who have passed the Sixth Standard in a Primary School were admitted for a two years' course, in which practical instruction in farm work could be combined with general education, this should meet our needs

for the present. If the demand proves to be too great for the existing accommodation, additions may be made to the present buildings, or other schools of the same kind may be established on the other State Farms. The Agricultural and Education Departments must co-operate in the organization of the courses. Generally speaking, the former Department should have the direction of the practical outdoor work, and the latter of the indoor school work. The outdoor work should be under men who have a real practical acquaintance with farming. The indoor work, apart from subjects of general culture, must be closely correlated with it, and the teachers should be men who have had special training in the science of agriculture. Sciences and Mathematics should not be taught on academic lines, as though leading up to a University Degree Course, but only as directly bearing upon the practical work of the farmer. Teachers for these schools, as well as for the Agricultural courses in High Schools, should be supplied in a few years' time by our own University. In the meantime, if such schools are started, as they may well be, within a year, we must obtain our staff from those who have been trained elsewhere.

III.—The Work of the College of Agriculture.

It has been already decided that the University of Perth shall, from the time of its establishment, include a Faculty of Agriculture. It may be presumed therefore that we shall not have an Agricultural College in the State apart from the University. It is true that such Colleges exist in other Australian States, but when they came into being the Universities had not included Agriculture among their Faculties. Where both a distinct Agricultural College and a University Faculty of Agriculture exist, there will probably be some duplication and overlapping. In countries with large populations and with plenty of money available for educational purposes this may not be a matter of very serious moment ; with our present population and resources it seems clear that we have no need for both.

The discussion of University work in detail is beyond the scope of this report. It may, however, be worth while to indicate briefly the methods by which some great Agricultural Colleges to which I paid short visits in Canada and the United States are making their influence felt throughout the whole of the communities with which they are connected.

The Macdonald College at St. Anne de Bellevue, near Montreal, was founded and endowed by Sir William Macdonald, at a cost of more than £1,000,000, for the purpose of meeting the educational needs of the rural community of Quebec. It is incorporated with McGill University, at Montreal, and constitutes its Faculty of Agriculture. The principal needs of the community were considered to be better farmers, better teachers, and better homes, and the College is organized in three sections to meet these ends.

It comprises a School of Agriculture, a School for Teachers, and a School of Household Science.

The full course for the degree in Agriculture extends over four years, but the number of students taking this is comparatively small. The principal work of the School of Agriculture is not with the Degree Students, but with the farmers' sons, who come for a two years' course. Such students must be at least 17 years of age and must have had at least a year's practical work on a farm ; there are at present about 140 going through the course, tuition being free for residents in Quebec. Large numbers of farmers also attend for short courses in special subjects, *e.g.*, Live Stock, Poultry, Dairying, Horticulture, which last for periods of from two weeks to three months. The School for Teachers is the Training College for the Province as far as the Protestant Schools are concerned ; it has about 150 students. They are all receiving instruction in Nature Study and Gardening. The School of Household Science has a small number of students taking a two years' course fitting them for positions as Matrons or Housekeepers, and nearly 100, mainly farmers' daughters, taking a one-year course which includes the ordinary Domestic Subjects and also Gardening or Dairying or the care of Poultry. This school also has short courses of three months' duration.

The College is succeeding in carrying out its object in two out of the three directions which were included in its original aim. It is educating, by means of courses of some length, a good number of future farmers. In Agricultural Colleges in some other countries, it has been a weakness that few of the students have gone back to real farm work ; most of them have aimed at some teaching or organizing posts. Such students are provided for at Macdonald College by the full Degree Course ; those who take the ordinary Diploma Course regularly return to the farms. The College is also giving a most valuable training to the women who will be responsible for the farmers' homes. In both these directions numbers who cannot come to the full courses are reached by the short courses. The third aim, the provision for the farming districts of well trained teachers with a knowledge of Nature Study and in sympathy with rural life, has been less successfully accomplished. This is due to conditions beyond the control of the College. The salaries paid by the local authorities to the country teachers are so small—often from £40 to £60 per annum—that the trained teacher will not apply for such posts. It is one of the instances in which the local control of education under bodies representing small areas leads to very unsatisfactory conditions.

Macdonald College is a new institution, and has not yet had time to make its influence fully felt throughout the Province. The neighbouring Province of Ontario has possessed for nearly 40 years a State Agricultural College. This College, which is situated at Guelph, is affiliated to the University of Toronto ; the students

are eligible for the University Degree in Agriculture. The College is the principal centre in the Province for research work and experiment, as well as for teaching. The Government supports it by a contribution of about £25,000 a year. In discussing the return for this outlay the Department of Agriculture reports as follows :— "The application of scientific principles to the practical operations of the farm, and the interchange and dissemination of the results of experiments conducted at the Agricultural College, and the practical experience on the part of successful farmers, have increased the returns from the farm far in excess of the expenditure on account thereof. The direct gain in yield in one class of grain alone has more than covered the total cost of agricultural education and experimental work in the Province."

The Agricultural Training is organized on much the same lines as at Macdonald College ; indeed, the success of Guelph in this direction made it the model upon which the Macdonald courses were largely framed. The short courses, lasting from two to twelve weeks, are free to farmers from Ontario. The other courses cost Ontario students about £24 per annum for the first two years, and £30 for the third and fourth year which are taken by only a small number. These charges practically cover only the cost of board and lodging ; tuition is really free. The students receive a small payment for work done on the farm, apart from that performed during farm classes. There is a School of Household Science for women, founded in 1904 by Sir W. Macdonald, and there are short Training Courses for Teachers in Agriculture, Horticulture, and Industrial Arts. But the most striking feature in connection with the work of the College is the way in which it has made its influence felt among the farmers throughout the State. The four principal methods by which the College maintains contact with the farmers are thus summarized in the report of a deputation from University College, Reading (England), which was recently sent to visit selected centres of agricultural education and research in Canada and the United States.

" (1.) By arranging numerous excursions from various districts in order to inspect the College and its Farm during the month of June. The railway and the electric cars bring the visitors to the College doors ; they go where they please about the Farm and buildings ; demonstrations are organized for their instruction ; and the State provides a simple lunch. The popularity of these visits is demonstrated by the numbers taking part in them. We were informed that, during June, 1910, visits were expected from more than 40,000 farmers.

(2.) By the Experimental Union, chiefly composed of old students of the College. The Experimental Union was established in 1885 ; and in 1909 about 400 of its members, widely distributed throughout the Province of Ontario, were carrying out, jointly, carefully planned experiments in Agriculture, Horticulture, Forestry

and Poultry-keeping. Between 1886 and 1909, the number of co-operative experiments conducted was 54,345. "In Agriculture alone definite experimental work was conducted on measured plots on no less than 4,853 farms in 1909." "It is impossible to estimate the influence of the co-operative experiments in Ontario in bringing 25,000 to 30,000 farmers to visit the College annually, in overflowing the College with students, in doubling the output of Ontario farms during the past sixteen years, and in the betterment both of the farmers and the farms of Ontario." (*See* Report of Ontario of Agriculture and Experimental Union, 1909, pp. 9–10, etc.).

(3.) By the system of appointing College graduates as county specialists. The mission of these specialists is to win the confidence of the district farmers. The specialist organizes farmers' clubs; he advises the farmers, when opportunity occurs, upon technical matters, such as drainage, pests, tuberculosis, etc.; he places him in touch with the College. Further the specialist is attached to the local High School, and he teaches there on certain afternoons of each week. About eleven * of these College missionaries have already been appointed. The scheme promises well, and it is hoped that in time a College specialist will be found in every country town. The system is analogous to that of the County Instructors in England and Ireland, with the noteworthy and far-reaching difference that in Canada the local instructor is in close association with an agricultural institution of the first standing as his head-quarters.

(4.) By publishing and distributing bulletins and leaflets on agricultural practice, by answering inquiries by correspondence, by sending members of the Staff to address farmers' clubs and similar institutions, and by analysing and reporting upon samples submitted by farmers to the College laboratories."

The College is thus not merely an institution for research and for teaching; it is "an aggressive distributor of the best ideas and methods" over the whole Province. In every part of the Province are Farmers' Institutes (*i.e.*, Associations) and Women's Institutes. The Farmers' Institutes arrange for regular courses of lectures every winter, and special lecturers are employed for this work throughout the season. The Women's Institutes, of which there are over 500, arrange for lectures and discussions on topics connected with agriculture, domestic science, and the general improvement of country life. They are organized by a Superintendent, and assisted by a periodical journal and by a Handbook of suggestions. They have an annual convention at the Guelph College, which is attended by hundreds of delegates. The influence of the College thus reaches not only the farmers themselves and their farms, but also their wives and daughters and their homes.

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* The number has now increased to fourteen.

Of all the College modes of activity, none is considered of greater promise in securing improved methods of farming than that of the establishment of graduates of the College as district officers, who are always available for consultation and advice, and who are constantly giving demonstrations and promoting experiments throughout the areas assigned to them. A recent report upon this system states—

"Three years of work of representatives of the Department in different sections of the Province has fully demonstrated the fact that herein lies the solution of the problem of agricultural education for the Province. Attempts to teach agriculture in the Public Schools had failed ; attempts to teach it in the High Schools had met with little suceess—except as supplementary to the more practical work of the district office. By a natural process of evolution we have arrived at the conclusion (strange that it should not have been thought of before), that the place to begin agricultural education, and the place to teach it practically and efficiently, is on the farm."

The Teaching Staff of the College does not confine its work to the College walls ; Professors from Guelph and other experts visit the farming districts from time to time for short courses of two, three, or four days. Such a Farmers' Week, being a four-day series of lectures on stock judging, seed judging, and farm operations, was attended in one district by over 1,200 persons.

Cornell University, situated at Ithaca, in the State of New York, is not a State University, but is mainly the product of private endowments and benefactions. It contains, however, two State Colleges, the Veterinary College, and the College of Agriculture. The latter is supported almost entirely by the State, but is administered by the Board of Trustees of the University. This Board corresponds largely to our Senate, and consists of five State Officials, five members appointed by the Governor, ten members elected by the alumni, and fifteen others chosen by the Board itself.

The College of Agriculture has a staff of over 80 Professors, Lecturers, and Instructors. It recognises the threefold nature of the work of such a College—research, teaching, and extension. Its research work has been of great practical value to the State in almost every branch of Agriculture, and it now has nearly 60 Post-graduate students who are remaining at the University for special research work after the completion of the regular four-year Degree Course. Taking the latter course there are over 400 students ; almost 150 more are taking a two-year course, and nearly 400 more come for a three-months' course in the winter. When a tabulation of the occupations of former students of the College of Agriculture was made a few years ago, it was found that over 90 per cent. were engaged in farming or in some line of work directly allied to agriculture.

But perhaps the most striking aspect of the College activities is the vigour with which its extension work is carried on by numerous methods. Bulletins giving the results of experimental work and

circulars on agricultural topics are distributed free throughout the State. The Bureau of Information answers some 40,000 questions from farmers in the course of a year. Farmers' Reading Courses are organized, bulletins going regularly to 5,000 readers, and correspondence being encouraged. Similar courses for farmers' wives have 15,000 readers enrolled. A quarterly publication on Nature Study reaches over 5,000 teachers and pupils in rural schools. Farm Boys' and Girls' Clubs are organized, in connection with which a monthly leaflet goes to 65,000 children, and a special supplement to 6,000 teachers. The College co-operates with farmers in making experiments on their land that will be of direct practical value to them. Four organizations are thus co-operating with the College—the State Experimenters' League, the State Drainage Association, the State Plant Breeders' Association, and the Housekeepers' Conference. Lectures are given by members of the College Faculty throughout the State. Educational exhibits are supplied for Agricultural Shows. Farmers' Associations are invited to meet at the College, and every year there is a Farmers' Week when from 2,000 to 3,000 farmers and farmers' wives gather at the College. "Farm Special" trains are run containing exhibits and accompanied by lecturers; stops are made at centres, as previously arranged, and discussions held. Schools of two or three weeks' duration are held in different centres for farmers on subjects of particular interest to the district, *e.g.*, in one centre on market gardening and poultry, in another on dairying and farm stock.

These methods by which the College, instead of waiting for students to come to it, goes out in search of students all over the State, are typical of many American Universities, and are applied in a great degree to other branches of study as well as to Agriculture. The University thus becomes an institution of which the advantages are not confined to residents in the metropolis or to students who can leave their homes for long periods; it becomes a really national institution whose influence is felt throughout the length and breadth of the State.

F.—SUMMARY.

According to the proposals outlined in the preceding sections, the course of study in the State Schools will be uniform for all until the Sixth Standard has been passed, a point which should be generally reached when a child is between thirteen and fourteen. Here there will be three possibilities open to him.

(i.) He may proceed to a High School for a four years' course.

(ii.) He may remain in the higher classes of the Primary School which should be so organized as to have a direct bearing upon his future work.

(iii.) He may proceed to a Farm School, or, if such is established, to a Day Industrial School.

If the first course is to be generally available, there must be a further establishment of High Schools, whether separate from, or attached to, Primary Schools ; and a liberal provision of maintenance scholarships for those whose homes are at a distance from such schools. The High Schools should provide for those who will proceed to the University, for those who will proceed to the Training College for teachers and also for those who will enter directly upon various industries and professions. The last group may be enabled later to attend Evening classes at the University or the Technical School.

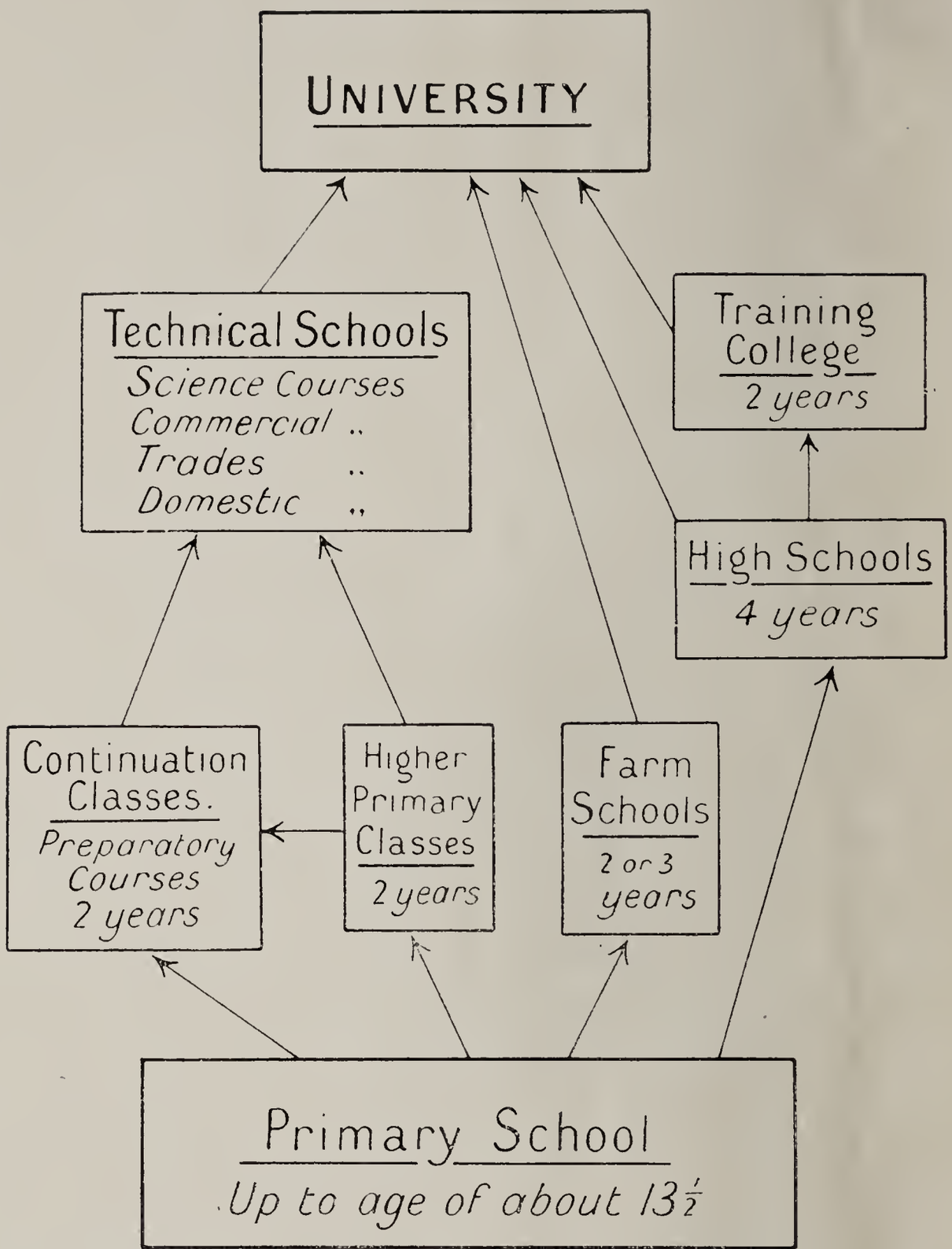
Of those who adopt the second course, some will leave school as soon as they reach the age of 14. These should then attend Continuation Classes, which will lead up to Trades Classes or Commercial Classes or other courses. Those who remain for a two years' course in the Higher Primary Classes will be qualified to enter such Trades Classes or Commercial Classes directly. It may also be possible to arrange for the transfer of those who are qualified to some of the upper courses of the High School, thus allowing for a change of plan at a later period than the age of 13. It will, however, always be preferable, where possible, for the whole of the four years' course to be taken in the High School.

The third group will be those for whom specialized schools are provided at this stage. After completing the Farm School course and gaining practical experience on a farm, the country boy will be ready to take advantage of opportunities offered by the Agricultural College of the University. In the same way the boy who attends a Day Industrial School and gains practical experience in the workshop will have opportunities offered him by the Technical School.

The relations between the Technical School and the University have still to be determined. It may be pointed out that our Technical Schools include courses of very diverse character, which in many countries are provided for by quite distinct institutions. The Trade School which aims at co-operating with the workshop in turning out efficient tradesmen, is an educational unit quite distinct in grade and character from what is generally known as a Technical College. The latter is mainly concerned not with manual dexterity but with scientific principles, with the theory that underlies the practice of technical professions. The Technical College is often recognised as being of University rank in its standards. Its courses are often to a large extent a duplication of University courses ; where they differ it is mainly in the fact that the Technical College keeps more directly in view the application of scientific principles to practical purposes. But many of the modern Universities are, so far as certain of their faculties are concerned, indistinguishable from Technical Colleges. In some cases the existence of, for instance, Engineering Schools both in a University and in a Technical College in the same town, involves a considerable amount of overlapping

and duplication. Where, as in our case, the population and the financial resources are not large, this should certainly be avoided, and the Technical School, so far as work of University standard is concerned, should become a School of the University.

The relations between the Training College and the University have also to be determined. It will have to be decided whether the more promising students are to be encouraged to take Degree courses at the same time as or before or after their Professional Training. Whichever course is decided upon, it must mean a longer period of preparatory work for the Teacher. The general experience of other countries is against the attempt to combine the two ; the result of such an attempt is too often that the Academic studies crowd out the Professional studies. In Germany the teacher destined for the Primary Schools has little or no opportunity of University work ; his only chance is to complete his training first and then take the full University course. This is possible in a few parts of Germany only: even there it is a course rarely adopted. The Secondary School teachers have, as a rule, had three or four years at a University besides their professional training. In Zurich the future Primary School teacher spends four years (generally from 15 to 19) in a special Training School. He may go to a University afterwards. The student who has passed through a High School may go to a University for training, and can get a Teachers' Certificate (of course without a degree) in $1\frac{1}{2}$ years. If he is to teach in a Higher Elementary School he must stay 2 or $2\frac{1}{2}$ years at the University ; if he is to teach in a High School he must stay 3 or 4 years at the University. In England the attempt to combine the Degree work with the Professional course has proved unsatisfactory. The teacher who wishes to take a Degree is now encouraged to give three years entirely to University work, and a fourth year to his Professional Training. Those who are not to take a Degree will complete their training in 2 years, but may be encouraged to take a course in one subject at a University. Though scholarships for the four years' course are given to promising students, there are many who cannot afford to wait for so long a time before beginning to earn their living. In Scotland also there is a two years' course, without University work, for the majority, and a four years' course, combining the Degree and the Professional Training, for others. The Carnegie Trust pays the fees for all Scottish students who take the full Degree Course. The High School teacher in any special subject is expected to have taken University honours in that subject. In Quebec and Ontario the highest grade of Teachers' Certificate is confined to those who have taken the full Degree Course or have been trained at the University ; the High School teacher must have taken the Degree. Teachers taking lower certificates do not go to the University. We shall probably find it necessary to provide for two different courses here. The teacher who takes the two years' course may be encouraged to take advantage of University teaching for one subject ;


UNIVERSITY
Technical Schools
Science Courses
Commercial ..
Trades ..
Domestic ,,
Training College
2 years
High Schools
4 years
Continuation Classes.
Preparatory Courses
2 years
Higher Primary Classes
2 years
Farm Schools
2 or 3 years
Primary School
Up to age of about 13½

the teacher who is to take a Degree as well as Professional Training will need a longer course.

The accompanying diagram shows the proposed scheme of connection between the various schools and courses. In it the University is taken to include the higher work of the Technical School. It is also assumed that the University will not confine itself to full Degree Courses, but will provide for Diploma Courses of shorter duration and demanding a less general and exacting standard of entrance qualification in certain subjects. Agriculture may be taken as an example.

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